REPORT DOCUMENTATION PAGE

FORM APPROVED - - - OMB NO. 0704-0188

1. AGENCY USE ONLY *(LEAVE BLANK)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED *STUDENT RESEARCH PAPER, Nov 2011-Feb 2012*

4. TITLE AND SUBTITLE Air Sea Battle Intelligence, Surveillance, and Reconnaissance Concept of Operations: Getting back to fundamentals	5. FUNDING NUMBERS *N/A*
6. AUTHOR(S) Major David C. Quinene, USAF	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) *USMC COMMAND AND STAFF COLLEGE* *2076 SOUTH STREET, MCCDC, QUANTICO, VA 22134-5068*	8. PERFORMING ORGANIZATION REPORT NUMBER *NONE*
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) *SAME AS #7.*	10. SPONSORING/MONITORING AGENCY REPORT NUMBER: *NONE*
11. SUPPLEMENTARY NOTES *NONE*	
12A. DISTRIBUTION/AVAILABILITY STATEMENT *NO RESTRICTIONS*	12B. DISTRIBUTION CODE *N/A*

ABSTRACT *(MAXIMUM 200 WORDS)*

For ten years the United States military, specifically the United States Air Force, has been employing ISR within a permissive environment against a nontraditional enemy. This mindset must be changed if the United States is to successfully employ ISR against more capable threats; mainly China. With China's advanced IAD systems, employing ISR in a nontraditional form as well as traditional will be crucial for a successful mission. Operating in a non-permissive environment will also change how ISR assets are used and how the ISR mission is to be accomplished. Decentralized execution will be vital in this type of environment and against such advanced threat systems. JIPOE conducted well before the commencement of operations will also be necessary in order to provide the most current intelligence to the United States military for the planning and execution of missions. This paper will address these topics in order to show what role ISR will play in a conflict against China as well as how to employ ISR successfully against a technologically advanced threat system. Processing, Exploitation, and Dissemination (PED) will not only need to be processed quickly, but disseminated to all players across the battlefield in order for successful integration amongst the U.S. military

14. SUBJECT TERMS (KEY WORDS ON WHICH TO PERFORM SEARCH) Air Sea Battle, intelligence, surveillance, reconnaissance, China, IADS, MTO, mission type orders, decentralized execution, JIPOE, assessment, integration, pacific, conventional, non-permissive, joint intelligence preparation of the environment	15. NUMBER OF PAGES: 29 16. PRICE CODE: N/A

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE:	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED	*UNCLASSIFIED*	*UNCLASSIFIED*	SAR

United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

TITLE

AirSea Battle Intelligence, Surveillance, and Reconnaissance Concept of Operations: Getting back to Fundamentals

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR

David C. Quinene, Maj, USAF

AY 11- 12

Mentor and Oral Defense Committee Member: Dr. Adam Cobb
Approved: _____
Date: 5/8/12

Oral Defense Committee Member: Dr.Richard DiNardo
Approved: _____
Date: 8 May 2012

Executive Summery

Title: Air Sea Battle Intelligence, Surveillance, and Reconnaissance Concept of Operations: Getting back to fundamentals

Author: Major David C. Quinene, Intelligence Officer, USAF

Thesis: It is critical for the United States military to get back to a fundamental mindset in order to successfully employ Intelligence, Surveillance, and Reconnaissance (ISR). Employing ISR assets in both a traditional and nontraditional role within a non-permissive environment will be the key enabling factor for successful operations against a highly advanced and capable threat.

Discussion: For ten years the United States military, specifically the United States Air Force, has been employing ISR within a permissive environment against a nontraditional enemy. This mindset must be changed if the United States is to successfully employ ISR against more capable threats; mainly China. With China's advanced IAD systems, employing ISR in a nontraditional form as well as traditional will be crucial for a successful mission. Operating in a non-permissive environment will also change how ISR assets are used and how the ISR mission is to be accomplished. Decentralized execution will be vital in this type of environment and against such advanced threat systems. JIPOE conducted well before the commencement of operations will also be necessary in order to provide the most current intelligence to the United States military for the planning and execution of missions. This paper will address these topics in order to show what role ISR will play in a conflict against China as well as how to employ ISR successfully against a technologically advanced threat system. Processing, Exploitation, and Dissemination (PED) will not only need to be processed quickly, but disseminated to all players across the battlefield in order for successful integration amongst the U.S. military.

Conclusion: The role of AirSea Battle calls for a few key points in order for the U.S. to be effective against a threat posed by China. Unlike the terrorist threat the U.S. has been fighting for a decade, the U.S. knows what threats they can expect to see from China. Also, unlike the unconventional threat, the U.S. will be able to fight in a conventional conflict during AirSea Battle operations. Another advantage will be the joint operational environment that is the crux of the entire AirSea Battle concept. Improving the flow of information across the services will not only beneficial during a conflict with China, but also any future operations in which the U.S. will be involved. However, there are obstacles the U.S. will have to maneuver through in order to be fully operational. The first priority is establishing and maintaining a consistent JIPoE. China has multiple systems, weapons, and cyber networks with the ability to degrade and disrupt U.S. operations. Therefore, knowing where the enemy is and their course of action will be pertinent in providing the U.S. military overall situational awareness of the battlefield environment.

Acknowledgments

To my Lord and Savior who has allowed me the knowledge and focus.

To the United States Air Force leaders, peers and subordinates that have continued to provide expertise and wisdom. I know I am a better Intelligence Officer because of your commitment.

To Dr. Adam Cobb and Dr. Richard DiNardo for all the hours spent reviewing, advising and directing this project, without your mentoring this paper would be little more than an unremarkable idea

To my wife, Meredith, whose dedicated support for my profession has allowed me to perform a job I love. Thank you for providing unyielding editorial support and always wavering through every circumstance that has come our throughout this research project

Table of Contents

DISCLAIMER

INTRODUCTION

New conditions require, for solution—and new weapons require, for maximum application—new and imaginative methods. Wars are never won in the past.

—General Douglas MacArthur

The Chinese People's Liberation Army's (PLA) have ongoing efforts to provide robust anti-access/area-denial (A2/AD) within the Western Pacific theater of operations (WPTO). A2/AD increases the risk of projecting U.S. power, along with the likelihood of increasing the cost of these U.S. efforts. Therefore, it is not unusual that the U.S. has begun to formulate a plan in which the military can deter this very capable threat. The idea behind this deterrence is known as the AirSea Battle (ASB), developed in 2010.[1]

The basic premise behind the AirSea Battle is to continue to maintain a stable military balance in the WPTO despite the Chinese A2/AD. While much attention is on the ASB, which will help the U.S. refocus on pre-911 military doctrinal foundations, a critical approach needs to be kept. Arguably, U.S. Joint Forces have to prepare for conventional warfare against a capable adversary like China, yet nothing substantial has come from the ASB concept. There seems to be a lack of critical strategy against the current Chinese threats, yet much anticipation of any solutions to counter a very capable Chinese military in its denied areas.

The premise behind the concept takes the same doctrine which United States Pacific Command is postured for- conventional warfare. The *2010 Quadrennial Defense Review (QDR)* articulates the essence behind the concept. The *QDR* directed the development of the air-sea battle concept to:

> [Defeat] adversaries across the range of military operations, including adversaries equipped with sophisticated anti-access and area denial capabilities. The concept will address how air and naval forces will integrate capabilities across all operational domains-air, sea, land, space, and cyberspace-to counter growing challenges to U.S. freedom of action.[2]

The purpose of this paper is to examine this concept as it would be used in the employment of Intelligence, Surveillance, and Reconnaissance (ISR) in order to achieve strategic goals and objectives of the U.S. military; specifically those involving the United States Air Force (USAF) and United States Navy (USN). This paper will also introduce an ISR Concept of operations (CONOPS) that addresses how the U.S and other countries will apply and adapt current ISR techniques to a conventional warfare environment.

BACKGROUND

A general acquaintance with the AirSea Battle concept will be the first step in understanding the following chapters. Following Desert Storm, U.S. military leaders began to realize their enemies' desire to for A2/AD capabilities, and also the ability for them to have such technology. From this realization, the Secretary of Defense directed the Departments of the Air Force and Navy to develop a concept that could be employed against this developing trend.[3]

The AirSea Battle was designed with the goal of ensuring that joint forces continue operations to maintain power projection. The Departments of the Air Force and Navy proposed this concept with the idea that their unique capabilities could work together effectively and efficiently against a joint threat. This new operational concept was designed to assess how US power projection capabilities can be preserved in the face of growing anti-access/area-denial challenges, with the most formidable challenge, which is posed by the Chinese military.[4]

But why is the U.S. so interested in offsetting China when a threat against U.S. interests and operations has not been evoked yet? Traditionally, the U.S. has been viewed as a global power with global reach. U.S. allies rely on this simple fact, and in some cases it is what makes the U.S. more appealing as an ally versus other countries such as Russia, China, or North Korea. The United States' declining ability to project and sustain large forces has been demonstrated in

military conflicts such as Vietnam, the Persian Gulf, and Korea. However, the United States' unchallenged reach is no longer as secure as it once was.

With improvements in technology and economic advancement of countries like China, the United States is beginning to see changes within the WPTO.[5] Not only changes that will affect U.S. operations within the area, but also changes that can negatively affect the U.S. relationship with allies and force them to seek out aid from China. Even though China has professed that it has no intentions of deliberately interfering with U.S. operations and interests within the WPTO, intents can quickly change. Therefore, the necessity for the U.S. to be postured for the AirSea Battle is vital for both military and economic reasons.

NATIONAL-LEVEL GOALS AND OBJECTIVES

If the purpose of the AirSea Battle concept is not to be a war-gaming plan, what goals and objectives does it include for the U.S.? Not only does AirSea Battle provide goals and objectives based around a deterrence point of view, but it also provides what the U.S. should accomplish if they were to come into conflict against China. This section will examine both a deterrent and conventional conflict, and the goals and objectives pertaining to each.

Consider this statement made by the Air-Sea Battle Office, Headquarters Marine Corps, "[AirSea Battle] is not a concept aimed at any particular potential adversary, nor a campaign plan designed to accomplish a specific national objective."[6] Therefore, AirSea Battle should be looked at as broad, general concept that can be changed for a variety of operations and against various threats. On the deterrent aspect of the concept, AirSea Battle should have a general focus on improving facilities, runways and bases that are located within the theater of operations.[7]

AirSea Battle also strives to continue the advancement of the U.S.' own cyber networks and communications in an effort to dissuade China from believing they have the ability to affect the US in these areas. Strengthening U.S. relations with their Allies and partners, and maintaining a heavy presence in the WPTO will also be another effective deterrence method against China thinking that they can interfere with U.S. trade partners without retaliation.

However, if the U.S. were to come into conflict with China, AirSea Battle is prepared.[8] To use the "*Air-Sea Battle Concept Summary"*, "[AirSea Battle] organizes these integrated tasks into three lines of effort, wherein air and naval forces attack-in-depth to disrupt the adversary's intelligence collection and command and control used to employ A2/AD weapons systems; destroy or neutralize A2/AD weapons systems within effective range of U.S. forces; and defeat an adversary's employed weapons to preserve essential U.S. Joint forces and their enablers."[9]

With the U.S. being heavily reliant on both data links and cyber networks, an objective proposed by the AirSea Battle is one that interrupts or prevents China from threatening these systems. Specifically, the U.S. would need to target China's IAD systems first and foremost. This includes their ability to interfere and disrupt satellite communications and orbits, including the PLA's aircraft and missiles. Since 2005, the PLA has incorporated offensive cyber warfare into its exercises to conduct early non-kinetic strikes on enemy computer networks.[10] Degrading and neutralizing China's IAD system will deteriorate some of the threat posed against the U.S.' ISR platforms that rely on things such as network communications. The U.S. also needs to employ ISR platforms in a tactical role to not only monitor, but target China's aircraft and missiles. One of the obstacles the U.S. will have to face to accomplish any of its goals and objectives will be integrating ISR platforms into all areas of operations.

Author Andrew Krepinevich (*AirSea Battle: A Point of Departure Operational Concept*) goes further into strategic goals and objectives of the AirSea Battle by stating the two stages that would be involved if the U.S. entered into a conflict with China. The first stage is the outbreak of hostilities, and the four lines of operations that it would coincide with. After the U.S. withstood the initial attack it would then need to focus on limiting the damage and executing a campaign against China's battle networks and their long-range weapons, along with seizing control of air, sea, space and cyber domains.[11] Krepinevich's next stage involved operations that would support US strategy and a prolonged, conventional conflict. These operations would include conducting a "distant blockade," sustaining prolonged operations logistically, and increasing industrial production of munitions.[12]

ISR IN AIRSEA BATTLE

"By 'intelligence' we mean every sort of information about the enemy and his country— the basis, in short, of our plans and operations."
— Karl von Clausewitz: On War, 1832

With the broad scope of objectives and goals posed by the AirSea Battle concept, how will ISR be employed to achieve these things? A look at how best to employ ISR in a non-permissive environment will be provided, along with a look at what ISR disciplines can bring to the AirSea Battle concept. Joint Publication defines intelligence, surveillance, and reconnaissance (ISR) as an activity that synchronizes and integrates the planning and operation of sensors, assets, processing, exploitation, and dissemination systems in direct support of current and future operations.

This synchronization and integration will be crucial when employing both traditional and nontraditional ISR assets in a non-permissive environment. Far from the military focusing on HVI's and IED's, the AirSea Battle will be focusing on highly sophisticated weapons systems.

These weapons systems present a formidable challenge to the U.S. and its assets, and the ability to overfly threats and get close to the target set will no longer be the norm during the AirSea Battle as it was for the past ten years in combat. The advanced A2/AD systems that China has in place will make service integration, centralized command and control, and decentralized execution all the more necessary in order to operate effectively.

The goal of ISR operations is to provide accurate, relevant, and timely intelligence to decision makers. The Air Force best achieves this goal through effective employment of ISR capabilities, by capitalizing on the inter-operability existing among ISR systems, and by using non-traditional sources to create synergy through integration. Simply put, the goal of ISR is to provide a combined goal that outweighs the efforts of the individual. The USAF definition and goal of ISR is not the only pertinent definition to understand.

The ISR concept of operations focuses on three different phases. First is the ongoing joint intelligence preparation of the environment (JIPoE). JIPoE is paramount for updating enemy order of battle (EOB), mobile targets, and safety of U.S. air and sea based weapon systems. Accurate analysis of this adversary's capabilities and intentions will drive an effective operational strategy. If the picture is wrong, the U.S. may face grave consequences. Therefore, predictive intelligence will be the goal for effective ISR employment during JIPoE.

Secondly, ISR planning and employment must be adequate during battlefield operations. This last decade has proven that ISR collection, exploitation, and dissemination can be planned and integrated into kinetic operations to find and fix targets rapidly and to provide swift threat warning. TTPs have been codified in a reduced planning cycle (or ATO cycle) for seamless integration between ISR weapon systems and nodes and other weapon systems and sensors that depend on intelligence to achieve mission objectives.

Lastly, the third phase will be the assessment of China during U.S. operations. As these phases continue and overlap throughout U.S. missions, assessment of the situation will allow the U.S. to adequately predict the enemy's intent and gain an accurate picture of the battlespace environment in order for the US to continue to plan and employ ISR assets both strategically and tactically. Arguably, the impetus that will keep U.S. objectives and focus on track can be exploited and gained by effective analysis and assessment of how well the U.S. and China are both doing. Again, this nonpermissive environment may not allow much opportunity for optimized collection, therefore the U.S. must take advantage of every presented opportunity.

As the AirSea Battle ISR concept is broken into three distinct phases, three elements will be present throughout ISR operations: First, Command and Control and battle management of multiple sensors, nodes, and analysis to the battlefield needs to be established. Second, ISR integration, coordination and cross cuing will demonstrate the art of how ISR information is passed to further the ISR picture. Third, dissemination has to reach single or multiple warfighters in the most expeditious manner. China will deny standard capabilities that the U.S. heavily depends on, but during major conventional warfare the U.S. will have to work around this disadvantage, while still providing intelligence in a rapid manner. The U.S. will also have to be prepared to employ nontraditional ISR platforms that have not been heavily relied on since the beginning of the WOT.

Going from a broad, overall view with national ISR operations down to a more focused, tactical view with theater ISR operations must be instinctual for ISR operators and commanders. Integrating national services such as NSA and NGA can allow ISR operators, commanders, and warfighters the ability to operate across a wider range of missions that can go from strategic to

tactical or broad to specific. Using national agencies to cross-cue in theater ISR will provide the U.S. with an additional method of collecting intelligence.

An important concept in ISR is JIPoE , defined as the analytical process used by joint intelligence organizations to produce intelligence estimates and other intelligence products in support of the joint force commander's decision-making process. It is a continuous process that includes defining the operational environment; describing the impact of the operational environment; evaluating the adversary; and determining adversary courses of action. The *"2010 Quadrennial Defense Review"* states, "China is developing and fielding large numbers of advanced medium-range ballistic and cruise missiles, new attack submarines equipped with advanced weapons, increasingly capable long-range air defense systems, electronic warfare and computer network attack capabilities, advanced fighter aircraft, and counter-space systems." This strategy must call for early, updated JIPoE well before U.S. operations commence. This early battlefield preparation will help to shape what China will do initially as U.S. forces are posturing throughout the battlefield. The U.S. must not make the mistake of trying to start ISR operations only a few days before operations, but rather consistently perform ISR operations to set conditions for China and confirm and update intelligence up to this point.

Too often, U.S. forces have depended on a very stringent collection management cycle that is not responsive enough to battlefield changes. National and theater collection mangers must have clear objectives and guidance to articulate to the ISR exploitation nodes what exactly they are tasked to do**.** The collection managers must have an expert understanding of their target sets and be able to critically analyze, assess, and predict how their targets sets will operate throughout the different stages of this ISR concept. Major Max Pearson offers the idea that mission type orders, where the distributed ISR nodes have C2 may work here.

The last few years have also showed that operations will commence even without the required JIPoE adequate for mission success. In this conventional war, where there will be a more integrated threat system capable of theater-wide failure, there needs to be a sound foundation of where the enemy is and where their capabilities are. The U.S. needs to start performing JIPoE on a daily basis starting now. With China continuing their advancement with technology and weapons, there will not be enough time to prepare for this kind of conventional threat inside a non-permissive environment after a conflict begins.

The last ten years have proven that ISR can and should be integrated into kinetic operations. Some of the most successful operations have been heavily dependent on ISR, and more so, ISR has been analyzed and integrated with other intelligence to achieve the commander's intent and objective of what is expected during the operation. Mission type orders (MTOs) were introduced to USAF ISR community in 2008 and emerged heavily in Afghanistan in 2010. MTOs have proven that, at times, ISR command and control has to be decentralized. These combat proven TTPs are vital for a non-permissive environment. The traditional bureaucratic command and control will not be nearly as effective as forward deploying MTOs to make timely decisions within this sophisticated battlespace.

MTOs have also helped change the paradigm of shortening the kill chain and much has been written about intelligence led operations. However, in the AirSea Battle, provided JIPoE has been accomplished effectively, ISR can be looked at as more than just an enabler, but more so as another combat arm employed either to achieve desired effects against the adversary or to lead the US right to a state of predictive intelligence. In the AirSea Battle concept, China will employ multiple capabilities against all domains of the Pacific, and ISR will have to be responsive to those threats. Collection will need to be processed and exploited, and if required,

fused with other sensors and exploitation nodes for potential new taskings. The sophisticated joint ISR community will have to be aware of every task and target set to fuse and disseminate ISR effectively in order to combat the very capable threat that China poses to US operations and objectives. ISR operations have to be synonymous with current operations and viewed as more than just an enabler for operation success, but also as a platform that that can accomplish targeting the threat.

The ISR concept's most important phase will be the "Assessment" phase. This phase will be constant throughout the AirSea Battle. A subset of this phase includes battle damage assessment (BDA). BDA occurs when tactical objectives are achieved and assessed. New objectives will then have to be evaluated, which implies new targets and possibly new taskings for assessment. There may be situations where operations will cease until the proper BDA is desired. This possibility directly correlates to the processing exploitation dissemination (PED) nodes, which will need to execute exploitation of precise threat warnings that will be the focus of most ISR operations throughout the AirSea Battle.

Due to the sophisticated and technologically advanced weapons systems that China operates, the assessment phase has even more weight in this type of environment. Being able to collect on a target post strike may not be feasible. The ability for ISR analysts to confirm whether a weapons system was destroyed or merely damaged can have strategic consequences on operational and strategic objectives. Employing nontraditional ISR for assessment will be even more necessary as the U.S. must efficiently use all their assets to build true BDA assessments. It is paramount to task fifth generation fighter with this mission set due to their advanced capabilities.

The USAF and USN will employ multiple collection sensors that will be processed, exploited, and analyzed by ISR PED nodes across the Pacific, and CONUS sites as well. These distributed ISR operations will be fundamental in turning information into actionable intelligence in order to quickly disseminate to warfighters and operational decision makers. The USAF DCGS has emerged as the principle USAF exploitation node. DCGS has partnered with multiple agencies for exploitation and analysis to answer all requirements from the warfighter. Although an integrated network through DoD does not exist, the Airmen and Sailors will work around this through multiple standard procedures solidified in the last few years. The community needs to also understand that the partnerships with those agencies create synergy, albeit further from the forward, but the expertise remains at national level agencies at large.

The center of gravity will remain with one entity to receive all this intelligence and fuse with other sensors. The AOC executes the ATO and all the associated taskings, but there needs to be a node that is able to cross cue and fuse intelligence based on collection sensors (theater and national), PED nodes, and scheme of maneuver.

Perhaps one of the most controversial issues during ISR execution over the last few years has been command and control. The USAF and USN inherently understand the concept of "centralized control and decentralized execution" but many have argued that the tasking (and retasking) process is not conducive to a dynamic enemy where the USAF is in control. As more adversaries emerge with enhanced capabilities, the U.S. has to respond just as quick. The kill chain from "*Sensor-to-Shooter"* must occur rapidly, yet be thoroughly analyzed and understood to not make rash decisions on targets. Throughout the Department of Defense there are a myriad of operations centers that analyze and fuse intelligence before dissemination, but while all these centers are productive, only one can actually have "Commander's Intent." In this AirSea Battle,

the center that has connectivity to ISR collection assets and exploitation nodes and maritime or aerial weapon systems, as well as clear commanders intent and objectives, should be the only one to command and control ISR taskings to achieve ISR effects.

This command and control entity or ISR Mission Commander will ensure that the plethora of ISR sensors tasked to collect on a target achieves what is requested from an analytical studied target approach. More often than not, ISR collectors look at specific targets within an Area of Operations (AO), when in fact those specific targets actually make up a bigger target set. The ISR Mission Commander will execute in a nonlinear method to provide the current battlespace picture. The ISR Mission Commander will ensure that objectives are accomplished with every sensor collecting. This is not to imply that MTOs will be limited or execution will be centralized. This concept proposes that in the A2/AD, one entity will work with the Commander's staff to command ISR with the relevant operational knowledge.
This fight cannot afford miscommunication between ISR PED experts and target experts.

The ISR Mission Commander can be at the USAF's AOC or the USN's MOC. Maj Michael Grunwald explores the concept of liaison officers (LNOs). With LNOs, not only would experts work with their respective platforms, but there is the added benefit of the human factor being both forward deployed and also at the DCGS. With LNOs being able to detect patterns and developing trust with units, ISR PED can be accomplished more effectively.

But just like commanders for every other mission (i.e. CAS, CSAR, SEAD), ISR, albeit as an enabler or used as supporting a mission, requires the right commander collocated with the right experts achieving the desired intent in an expeditious manner that will enable the continued operations to achieve the objectives and goals. In order to achieve ISR mission objectives in this complex non-permissive environment, success will rely on target system expertise, ISR

interoperability, continued success of the joint capabilities of the USAF and USN, C2 integration, and decentralized execution supported by timely and accurate analysis from the theater and national levels.

FURTHER STRATEGIC CONSIDERATIONS

Although the focus of this paper is on ISR in the ASB, certain other objectives must be met in order for the AirSea Battle to be successful. In addition, the military must work to create the optimal global environment. Therefore, brief examination of the following is important:

- Cooperative work between the United States Air Force and Navy
- Cooperative work with Pacific allies
- Continued dialogue with the PLA
- JIPOE on China
- Changing from a nonconventional to a conventional mindset

Cooperative work between the United States Air Force and Navy

The integration between both services to conduct joint operations is fundamental within AirSea Battle concept. In order to be successful, both the USAF and USN will need to provide mutual support to each other in the event that China launches a strike against the US. For example, the RC-135 (RJ) can exploit SIGINT in order to provide indications and warnings to the USN's F/A-18s or carrier groups operating in the area of interest. The USAF's ability to rapidly exploit intelligence that could potentially save not only U.S. assets, but also lives, is a crucial benefit that AirSea Battle is founded upon.

Furthermore, the USAF and USN can work together in employing both traditional and nontraditional ISR assets within the WPTO. This concept will bring a new focus to traditional naval and air force training, tactics and procedures (TTP). A new focus will be particularly

important due to the fact that China has a developing anti-satellite (ASAT) capability that could render some of the United States' most effective ISR platforms inoperable.[13] It will also call for an emphasis on logistics, especially in determining which bases and airfields will be used, what assets will be coming from each, and what can we expect to gain from those assets employed.

The mutual support between the USAF and USN will be the defining factor throughout the AirSea Battle concept, as well as the turning point in a fight against China. If done correctly, USAF assets can neutralize the threat of China's maritime capabilities, thereby providing protection of USN carrier fleets. In turn, this will allow USN aegis ships to provide protection to the U.S. bases that are in a forward deployed setting (i.e. Guam, Japan, Australia, and the Philippines).[14] This will also allow USAF aircraft to use the USN carriers as takeoff for nontraditional ISR platforms in the event that traditional ISR assets are taken offline or are hampered in their collection abilities due to China's A2/AD system.

Cooperative work with Pacific allies

The AirSea Battle concept is not exclusive to the U.S. It would require the active and persistent support from allies and partners. This concept is explained in a two-fold process. The first describes the U.S. reaction after an outbreak of hostilities. The second involves the U.S. military operational plan in a conventional conflict with various operations designed to support U.S. strategy.[15] In the end, the AirSea Battle is designed to mitigate adversaries in the WPTO, namely China, from acting in a way that would hinder U.S. operations, including the relations and trade with allies and partners.

But first, there needs to be careful look at which bases will be used in the AirSea Battle plan. The U.S. bases that are best positioned to provide both ISR assets and command and control will be those located within the WPTO, namely Japan, South Korea, and Guam. These

countries allow for a more rapid employment of ISR assets within the theater of operations. Although Japan, South Korea and Guam already provide a U.S. presence in the WPTO, the U.S. has sought additional facilities and bases within the region. This will allow the U.S. improved maintenance and logistical facilities needed in a prolonged conflict with China. Possible locations include Australia, Singapore, Vietnam and even the Philippines.[16]

The United States' recent preparations in Australia may be a precursor in a China/U.S. conflict. During President Obama's visit to Australia, both countries agreed to an increase of the U.S. military presence in the country.[17] This would increase the number of personnel in the area from 200 to 2500; along with fighters, stealth, and cargo aircraft deploying to Australia. China immediately responded to this agreement with concern that this expanse in defense would not help the interests of the Asian-Pacific region.

Continued dialogue with the PLA

"The military's strategic shift to the Pacific region provides an opportunity to improve U.S.-China relations," the chairman of the Joint Chiefs of Staff stated on the 19th of February this year.[18] This will be a difficult road to travel considering China's stance that the U.S. would only interfere with the current policies and trade within the Pacific. China, like most technologically advanced countries, does not wish to be monitored and contained by any nation, least of all by the U.S. Their continued development of ASAT weapons and IAD systems will be a sensitive topic for further peaceful relations between the U.S. and China. The U.S. does not want their increased presence within the region to lead to an arms race or into a confrontation with China.[19] That being said, the U.S. still needs to be prepared for the possibility of China striking against the U.S. in the future.

JIPOE on China

Possibly the greatest concern the U.S. would face in a conflict with China would be the improvement in the Chinese use of ISR employment. Although quite capable themselves, the advancement of China's technology, and their use of long range weapons, will prove to be a formidable threat to U.S. ISR capabilities. The U.S.' ISR platforms will first have to face the threat of being shot down due to this non-permissive environment before their sensors are able to collect any intelligence. In addition, platforms will face the interruption of cyber communications and data links that are vital to relay and exploit information. Both the USAF and USN will need to enhance their standard TTPs in a way that benefits each other's missions, but also in a way that employs nontraditional platforms in an ISR role due to China's technological abilities.

When looking at China, their ability to hide their intentions and keep their capabilities quiet has become second nature. This inherent trait will be the most challenging intel gap to solve. Allowing for this element, we have to look at China's strategic goals in order to assess what their intentions will be. According to the 2006 *Quadrennial Defense Review*, "[China] has the greatest potential to compete militarily with the United States and field disruptive military technologies…"[20] It is also important to note that "The PLA's ongoing military buildup shows no signs of abating, and is of growing concern to regional governments."[21] Taking that into account, it is plausible that China desires to challenge the U.S. position as the only strategic global power. Therefore, the most pertinent questions are as follows: 1) how will China attempt to reach this goal, and 2) how can the U.S. successfully deter this threat?

Considering the ISR part of the AirSea Battle, China's interest in advanced technology and ASAT weapons could become a formidable threat to U.S. operations. If China can readily

interfere with our data links and cyber communications, the ability for the U.S. to use ISR platforms (such as the Predator) that rely on these systems could render them ineffective.

AirSea Battle concept should "not be seen as a 'war-winning' concept in itself," but rather as a way of deterring the threat and maintaining a stable presence in the region.[22] Following this reasoning, the U.S. should invest its time and money in monitoring China's improvement and advancement with cyber networks and their ASAT capabilities. The realistic threat of U.S. satellites being attacked by China's ASAT weapons is an added reason why utilizing overhead ISR assets is time-sensitive if the U.S. entered into a campaign against China. China is aware of how critical these assets are to U.S. operations. If China decided to strike against the U.S., damaging communications and ISR missions would be at the top of their list.

China's ASAT weapons would also hinder the U.S. from using its most important weapons- such as satellite guided precision missiles- as well as affecting ground, air, and sea-based forces' movements.[23] Whereas China's ASAT weapons would mainly focus on U.S. assets already in the air, their IAD systems would be concerned with attacking the air forces on the ground before they took off.[24] Therefore, surrounding bases such as Japan, Australia, and Guam would become potential targets for China in order to accomplish this objective.

Monitoring China's overlapping defensive coverage is necessary if the U.S. wishes to find a "soft" area where it can penetrate. If overhead assets are disabled by China, theater level ISR assets such as the U2 and RJ will be used to provide this intelligence. Using these assets will provide the U.S. a better picture about China's defense systems when prepping for a conflict. The P3-AIP can also provide intelligence on China's submarine activity in order to complete the land, air, and sea perspective.

Changing from a nonconventional to conventional mindset

Roger Cliff, a China specialist at RAND, stated that "The United States has not fought a conflict against an adversary capable of challenging its supremacy in the air since at least the Korean War."[25] With the military devoting the past ten years on operations within a permissive environment against a nonconventional threat, the shift to a conventional threat inside a non-permissive environment is difficult enough without the technological advancements taking place within China as well. Specifically these are China's A2/AD capabilities, including electronic decoys, infrared decoys, false-target generators and angle reflectors during electronic warfare, along with traditional concealment, camouflage and deception.[26] If the U.S. wants to succeed in a war against China, countering these threats is a must.

The U.S. needs to return to a doctrinal outlook on employing ISR assets. No longer will the U.S. be looking for insurgents throughout a permissive environment, targeting areas and houses of known affiliates. The U.S. will be operating in a non-permissive environment against a very capable and effective threat that is known and can be identified. Operators need to gear themselves towards monitoring and targeting against weapons systems versus insurgents and hold-up buildings. With weapons systems as the U.S. targets, an increased state of alert and awareness will be lifesaving, especially when the need for nontraditional ISR assets is central in accomplishing the mission.

Moving the military out of a ten year nonconventional war mindset will not be easy. However, the integration of the USAF and USN, the focus of employing ISR assets into a doctrinal mindset, and the shifting the U.S. way of fighting back to conventional will all help make the transition smoother. The U.S. must start prepping for this fight now by changing training and tactics to be prepared for the fight against China.

CONCLUSION

The last ten years of combat achieved a level of joint understanding and employment that could not have been replicated the previous twenty years since the Goldwater–Nichols Act. And as the USAF and USN ISR collection and PED nodes have been integrated into combat operations, the prevalence and momentum of ISR operations will transfer into the Pacific. While joint ISR employment has been effective, the U.S. must look to train and exercise for major combat operations because of the much more complex threat to U.S. weapon systems. This is not to say that U.S. Air Force and U.S. Navy intelligence are fully developed to integrate into major combat operations, but the relationships and understanding of systems are there. The bigger issue will be applying the relationships and understanding from the counter terrorism and counter insurgency to warfare against China.

Although the U.S. and its forces are familiar with global reach and power, the AirSea Battle concept involves a shift from current counter insurgency (COIN) operations to a conventional conflict. COIN operations allowed the U.S. to add lessons learned from the WOT to employ ISR assets both strategically and tactically. The complexity of integrating not only two branches of the military, but also a handful of bases, creates the need for strategic goals and objectives to be understood by those involved. In regards to ISR operations, the main concerns of the U.S. are China's IADs along with their low-signature submarines.

According to the AirSea Battle document from the Center for Strategic and Budgetary Assessment (CSBA), the main goal of the U.S. will be to sustain their ability to successfully project military power in the region in order to defend U.S. interests and protect its friends and allies. China's military focus is to detect and defend its borders and waters with long-range, low-observable capabilities, the involvement of ISR assets is paramount in securing this objective.

AirSea Battle calls for a few key points in order for the U.S. to be effective against a threat posed by China. Unlike the WOT that the U.S. has been fighting for a decade, the U.S. knows who the enemy is and what threats they can expect to see from China. Also unlike the WOT, the U.S. will be able to fight in a conventional conflict. Another advantage will be the joint operational environment that is the crux of the entire AirSea Battle concept. Improving the flow of information across the services will not only beneficial during a conflict with China, but also any future operations in which the U.S. will be involved.

However, there are obstacles the U.S. will have to maneuver through in order to be fully operational. The first priority is establishing JIPoE. China has multiple systems, weapons, and cyber networks with the ability to degrade and disrupt U.S. operations. Therefore, knowing where the enemy is and their course of action will be pertinent in providing the U.S. military overall situational awareness of the battlefield environment.

In short, AirSea Battle can be as great as the U.S. makes it. Integration, cross-cuing, universal objectives and goals, and the shift in mindset going from a nonconventional fight to a non-permissive environment with a conventional enemy are all pertinent issues in order for the U.S. to be effective against China. Preparation now can prove to be life saving for U.S. military members in case of military conflict with China.

[1] In September 2009 the US Air Force chief of staff, General Norton Schwartz, and the US Navy's chief of naval operations, Admiral Gary Roughead, signed a classified memorandum to initiate an effort by their Services to develop a new operational concept known as "AirSea Battle." Available from: http://www.airforcetimes.com/news/2009/11/airforce_navy_cooperation_111509w/ (accessed 10 Jan 2012).

[2] Department of Defense, *Quadrennial Defense Review Report* (Washington, D.C.: Department of Defense, 2010), p. 55

[3] The Air-Sea Battle Concept Summary. Air-Sea Battle Office, Headquarters Marine Corps. 10 November 2011. http://www.marines.mil/unit/hqmc/Pages/TheAir-SeaBattle conceptsummary.aspx (accessed 11 January 2012).

[4] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[5] See "Why China Matters: Is there an Imminent Threat?" Maj Terry, Wesley E. 6 May, 2008.

[6] The Air-Sea Battle Concept Summary. Air-Sea Battle Office, Headquarters Marine Corps. 10 November 2011. http://www.marines.mil/unit/hqmc/Pages/TheAir-SeaBattle conceptsummary.aspx (accessed 11 January 2012).

[7] "AirSea Battle" By Halloran, Richard. Aug 2010. Air-Force Magazine. Vol. 93. No. 8 http://www.airforcemagazine.com/MagazineArchive/Pages/2010/August%202010/0810battle.aspx (accessed on 23 December, 2011).

[8] "AirSea Battle" By Halloran, Richard. Aug 2010. Air-Force Magazine. Vol. 93. No. 8 http://www.airforcemagazine.com/MagazineArchive/Pages/2010/August%202010/0810battle.aspx (accessed on 23 December, 2011).

[9] The Air-Sea Battle Concept Summary. Air-Sea Battle Office, Headquarters Marine Corps. 10 November 2011. http://www.marines.mil/unit/hqmc/Pages/TheAir-SeaBattle conceptsummary.aspx (accessed 11 January 2012).

[10] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". p. 27 (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[11] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". p. xiii (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[12] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". p. xiii (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[13] China has shown on a few occasions their ability to interfere with US cyber communications. See DoD *"Military and Security Developments Involving the People's Republic of China"*2010. http://www.scribd.com/doc/55914176/2010-Cmpr-Final (accessed 03 January 2012)

[14] Carreno, Jose. "What's New about the AirSea Battle?" August 2010, vol. 136. http://www.usni.org/magazines/proceedings/2010-08/whats-new-about-airsea-battle-concept. (accessed on 17 February, 2012)

[15] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[16] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[17] Balmasov, Sergei. "USA uses Australia to make China play by the rules". 21 November, 2011. http://english.pravda.ru//world/australia/21-11-2011/119688-usa_china_australia-0/ (accessed 17 February, 2012).

[18] Army Sgt. 1st Class Marshall, Tyrone C. Jr. "Dempsey Discusses U.S.-China Relations, Middle East Challenges" 19 February, 2012. http://www.defense.gov/news/newsarticle.aspx?id= 67250 (accessed 20 February, 2012).

[19] Army Sgt. 1st Class Marshall, Tyrone C. Jr. "Dempsey Discusses U.S.-China Relations, Middle East Challenges" 19 February, 2012. http://www.defense.gov/news/newsarticle.aspx?id= 67250 (accessed 20 February, 2012).

[20] U.S. Department of Defense, Quadrennial Defense Review Report, February 6, 2006, p. 29, available at www.defenselink.mil/pubs/pdfs/QDR20060203.pdf. (accessed January 03,2012).

[21] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[22] Krepinevich, Andrew F. "AirSea Battle: A Point-of-Departure Operational Concept". (CSBA, May 18, 2010), http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4/ (accessed on 24 December, 2011).

[23] Gertz, Bill. "Inside the Ring". 28 March, 2008. http://www.gertzfile.com/gertzfile/ring032808. html (accessed 17 February, 2012).

[24] RAND Office of Media Relations. "Analysis of Chinese Military Doctrine Indicates China Could Pose Serious Challenge to U.S. and Allied Air Forces". 21 February, 2011. http://www.rand.org/news/press/2011/02/21/index1.html (accessed 17 February, 2012).

[25]RAND Office of Media Relations. “Analysis of Chinese Military Doctrine Indicates China Could Pose Serious Challenge to U.S. and Allied Air Forces”. 21 February, 2011. http://www.rand.org/news/press/2011/02/21/index1.html (accessed 17 February, 2012).

[26] Gertz, Bill. “Inside the Ring”. 28 March, 2008. http://www.gertzfile.com/gertzfile/ring032808.html (accessed 17 February, 2012).

BIBLIOGRAPHY

"AirSea Battle". (2009, November). Retrieved January 10, 2012, from Air Force Times Web site: http://www.airforcetimes.com/news/2009/11/airforce_navy_cooperation_111509

2-01, J. P. (2007, July 17). *Joint and National Intelligence Support to Military Operations.* Retrieved January 13, 2012, from AFDD Web site: http://www.e-publishing.af.mil/shared/media/epubs/AFDD2-0.pdf

AFDD. (2003, November 17). *Joint Publication 2-01 Joint Warfare of the Armed Forces of the United States.* Retrieved January 13, 2012, from DTIC Web site: http://www.dtic.mil/doctrine/jel/service_pubs/afdd1.pdf

AFDD. (2009, June 16). *Joint Publication 2-01.3, Joint Intelligence Preparation of the Operational Environment.* Retrieved January 13, 2012, from FAS Web site: http://www.fas.org/irp/doddir/dod/jp2-01-3.pdf

Army Sgt. 1st Class Marshall, T. C. (2012, February 19). *Dempsey Discusses U.S.-China Relations, Middle East Challenges.* Retrieved February 20, 2012, from Defense.gov Web site: http://www.defense.gov/news/newsarticle.aspx?id=

Balmasov, S. (2011, November 21). *USA uses Australia to make China play by the rules.* Retrieved February 17, 2012, from Pravda Web site: http://english.pravda.ru//world/australia/21-11-2011/119688-usa_china_australia-0

Carreno, J. (2010, August). *What's New about the AirSea Battle Concept.* Retrieved February 17, 2012, from USNI Web site: http://www.usni.org/magazines/proceedings/2010-08/whats-new-about-airsea-battle-concept

Corps, H. M. (2011, November 10). *"The Air-Sea Battle Concept Summary.* Retrieved January 11, 2012, from Headquarters Marine Corps Web site: http://www.marines.mil/unit/hqmc/Pages/TheAir-SeaBattleconceptsummary.aspx

DoD. (2010). *Military adn Security Developments Involving the People's Republic of China.* Retrieved January 03, 2012, from SCRIBD Web site: http://www.scribd.com/doc/55914176/2010-Cmpr-Final

Force, H. U. (2008). Theater ISR CONOPS.

Gertz, B. (2008, March 28). *Inside the Ring.* Retrieved February 17, 2012 , from The Gertz File Web site: http://www.gertzfile.com/gertzfile/ring032808.

Halloran, R. (2010, August). AirSea Battle. *Air Force Magazine*.

Joint Publication 2-0, J. I. (2007, June 22). *Joint Intelligence.* Retrieved January 13, 2012, from FAS Web site: http://www.fas.org/irp/doddir/dod/jp2_0.pdf

Krepinevich, A. F. (2010, May 18). *AirSea Battle: A Point of Departure Operational Concept.* Retrieved December 24, 2011, from CSBA Web site: http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/4

Lt Col Brown, J. M. (2009, December 01). Operating the Distributed Common Ground System: A Look at the Human Factor in Net-Centric Operations.

Maj Grunwald, M. (2009, January). *Transforming Air Force ISR for the Long War and Beyond.* Retrieved January 08, 2012, from AUPRESS Web site: http://aupress.au.af.mil/digital/pdf/paper/wf_0036_grunwald_tranforming_isr.pdf

Maj Pearson, M. (2011, May 02). The New ISR Paradigm.

Maj Terry, W. E. (2008, May 6). Why China Matters: Is there an Imminent Threat?

MSNBC. (n.d.). *Pentagon to Unveil Revised Defense Strategy*. Retrieved January 04, 2012, from MSNBC Web site: http://www.msnbc.msn.com/id/45861430

Press, P. F. (2012, January 09). *America's Military Focus on Asia*. Retrieved January 14, 2012, from Pacific Free Press Web site: http://www.pacificfreepress.com/news/1-/10633-americas-military-focus-on-asia.html

RAND Office of Media Relations. (2011, February 21). *Analysis of Chinese Military Doctrine Indicates China Could Pose Serious Challenge to U.S. and Allied Air Forces.* Retrieved February 17, 2012, from RAND Web site: http://www.rand.org/news/press/2011/02/21/index1.

Report, Q. D. (2006, February 6). *US Department of Defense, Quadrennial Defense Review Report.* Retrieved January 03, 2012, from Defense Link Web site: http://www.defenselink.mil/pubs/pdfs/QDR20060203.pdf

Stokes, M. (2009, September 14). *China's Evolving Conventional Strategic Strike Capability.* Retrieved January 11, 2012, from Project 2049 Web site: http://project2049.net/documents/chinese_anti_ship_ballistic_missile_asbm.pdf